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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,988	06/29/2001	Sun Kwan Eom	041501-5426	5664

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EXAMINER

ORTIZ, EDGARDO

ART UNIT PAPER NUMBER

2815

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,988

Applicant(s)

Eom

Examiner

Edgardo Ortiz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 11, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-14 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

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DETAILED ACTION

This Office Action is in response to an election filed June 11, 2003.

Election/Restriction

1. Applicant's election with traverse of claims 1-7 and 10-14 in Paper No. 4 is acknowledged. The traversal is on the ground(s) that *"the subject matter of all claims 1-20 is sufficiently related that a thorough search for the subject matter for any species would necessarily encompass a search of the subject matter of the remaining species"*. This is not found persuasive because Applicant has failed to submit evidence of record showing the species identified in the restriction requirement to be obvious variants of the claimed invention. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 10 and 12-14 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Van Slooten (U.S. Patent No. 6,229,582) in view of Gothard (U.S. Patent No. 5,276,378). With regard to Claim 1, Van Slooten teaches a bottom portion (39) having a channel (30) uniformly crossing an entire surface thereof, an arc-discharging gas (33) within the channel (column 4, lines 50-51),

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a cover (38) disposed on a junction surface of the bottom and an electric field generating means (31,32) for generating an electric field, wherein the electric field means is placed along opposite lateral sides of the channel. See figure 2.

However, Van Slooten fails to teach that the cover is coated with a fluorescent material. Gothard discloses a fluorescence light emitting device which includes top and bottom glass plates (12, 14) which are coated with a layer of fluorescence material (18) such as phosphorous (column, 2, lines 62-64). See figure 1. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Van Slooten to include a cover is coated with a fluorescent material, as suggested by Gothard, in order to permit visible light generation by the excitation of the fluorescence material by the gas discharge within the channel and widen the expanse of light emitted by the device.

With regard to Claim 2, Van Slooten teaches electric field generating means comprising a cathode (31) disposed at one of the opposing lateral sides of the channel (30), an anode (32) disposed at a second one of the opposing lateral sides of the channel, and a connector comprising output amplifiers (26) connected to end portions of the electric field generating means.

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With regard to Claim 3, Van Slooten teaches a first distance between the cathode (31) and the anode (32) that is approximately the same as a second distance between the opposing lateral sides of the channel (30).

With regard to Claim 4, Van Slooten teaches a connector comprising output amplifiers (26) that applies an external power source to the electric field generating means (31, 32).

With regard to Claim 5, Van Slooten teaches a first open surface that is sealed after an end portion of the electric field generating means (31, 32) has been connected to a connector a connector comprising output amplifiers (26) and after the ar-discharging gas (33) has been injected into the channel (30). However, Van Slooten fails to teach that the channel has a continuous curve shape. Gothard discloses a fluorescence light emitting device which includes a conductive strip (30) which defines a serpentine channel path having a continuous curve shape between two electrodes (20, 22). See figure 1. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Van Slooten to include a channel having a continuous curve shape, as suggested by Gothard, in order to create an electric field in a channel path favorable to an ionization path within the channel.

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With regard to Claim 6, Van Slooten teaches a bottom and top portions (38, 39) having a rectangular shape.

With regard to Claim 7, a further difference between Van Slooten and the claimed invention is, a channel that is alternately formed parallel to a long side and a short side of the bottom portion of the device. Gothard discloses a fluorescence light emitting device which includes a conductive strip (30) which defines a serpentine channel that is alternately formed parallel to a long side and a short side of glass plate (12). See figure 1. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Van Slooten to include a channel that is alternately formed parallel to a long side and a short side of the bottom portion of the device, as suggested by Gothard, in order to create an electric field in a channel path favorable to an ionization path within the channel.

With regard to Claim 10, Van Slooten teaches electric filed generating means (31, 32) that include wires.

With regard to Claim 12, Van Slooten teaches electric filed generating means (31, 32) that include at least two films, wherein each of the at least two films is formed upon opposite lateral sides of the channel (30).

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With regard to Claim 13, Van Slooten teaches a cover (38) formed of at least a glass material, a heat-resistant resin, a metal and an oxide.

With regard to Claim 14, Van Slooten teaches a distance between the cathode (31) and the anode (32) that is constant.

Claim 11 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over Van Slooten (U.S. Patent No. 6,229,582) in view of Gothard (U.S. Patent No. 5,276,378) and further in view of Buzak et.al. (U.S. Patent No. 6,016,032). With regard to Claim 11, Van Slooten and Gothard as stated supra essentially disclose the claimed invention but fail to show, grooves of a predetermined depth formed at both of the opposing lateral sides of the channel. Buzak discloses a plasma addressed liquid crystal panel with wire electrodes which includes a channel (20) and electrodes (64) formed in grooves (62) of a predetermined depth formed at both of the opposing lateral sides of the channel. See figure 2C. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Van Slooten and Gothard to include grooves of a predetermined depth formed at both of the opposing lateral sides of the channel, as suggested by Buzak, in order to secure and facilitate placement of the wire electrodes.

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Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Edgardo Ortiz (Art Unit 2815), whose telephone number is (703) 308-6183. In case the Examiner can not be reached, you might call Supervisor Eddie Lee at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 receptionist whose telephone number is (703) 308-0956.

EO/AU 2815

6/17/03

A handwritten signature in black ink, appearing to read 'Eddie Lee', with a large, sweeping initial 'E'.

**EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**